APPLYING IMPORTANCE-PERFORMANCE ANALYSIS FOR DEVELOPING A MODEL OF QUICK SERVICE RESTAURANT INNOVATION STRATEGIES IN DOWNTOWN BANGKOK

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Abstract

There is considerable research-based evidence supporting the idea that innovative restaurants are better able to improve their service quality and reputation, leading to an increase in sales revenue and profit growth. Consistent innovation enables restaurants to stay ahead of their competitors and maintain a competitive advantage over the long term. Thus, it is necessary for restaurant entrepreneurs to use a variety of innovative strategies to achieve such a competitive advantage. The purpose of this research was to apply importance-performance analysis (IPA) within the context of quick service restaurants (QSR) located in downtown Bangkok, the capital city of Thailand, as well as evaluating innovative attributes of QSRs from the customer perspective, regarding their expectations (perceived importance) and satisfaction (perceived performance). A total of 400 QSR customers were selected for the sample, with purposive sampling being employed to collect data, in order to ensure only working-aged respondents were selected for the sample; convenience sampling was also used alongside. Finally, the twenty-one predetermined innovation attributes were divided into four categories: marketing, organizational, product, and process innovations. These four factors were plotted two-dimensionally onto an IP grid using their mean values of performance and importance. These were then integrated into a matrix which can be used as a guide for Bangkok QSRs to identify appropriate innovation attributes. The paper concludes by providing a developed model of innovative strategies for utilization in QSRs.

Keywords: Importance-performance analysis, Innovation strategies, Quick service restaurants

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1. INTRODUCTION

The restaurant business is unique in its blend of customer relations alongside art, advertising, and operating mechanisms (Gheribi, 2017). The restaurant business in Thailand is the main target for business entrepreneurs, with a business value of 420,000 million baht in 2018 (Wongnai B2B Team, 2019). Based on Wongnai's database, every year between 2015 and 2018 saw growth in restaurant businesses throughout Thailand. In 2018 this growth increased at a greater pace, with a total of 34,934 new restaurants opening nationwide, a 9.6% increase from 2017. The restaurant business continued to grow in 2019, at an average rate of 5%. The reason for these trends is the expansion of restaurants into retail and department stores (Kasikorn Research Center, 2018). Subsequently, there has been an increase in intense competition within the Thai restaurant business market, especially among restaurants that are small and medium enterprises (SME) (Department of Business Development, 2017).

According to the Department of Tourism (2017), SME restaurants accounted for 99.72% of the total number of restaurants. Most of these are QSRs located in Bangkok, the capital city of Thailand. A QSR offers food items that are easily prepared or processed and served quickly. Their innovation process focuses on product quality and uniformity, with the ability to deliver orders rapidly to customers, and decrease labor and equipment costs in individual restaurants (Ottenbacher and Harrington, 2009).

Martin-Riosa and Ciobanua (2019) claim that innovation strategies contribute to competitive advantages, advocating that through 'innovation' restaurants can improve their quality and reputation, reduce costs, and increase sales and profits. Innovation strategies are a plan used by a business to accelerate advancements in technology or services, usually by investing money into research and development activities. Thus, restaurants can keep ahead of their competition and maintain this advantage by constantly innovating and adapting (Ottenbacher and Harrington, 2007).

According to Jin, Line and Merkebu (2016), consumers may be inclined to pay a premium for innovation. As a result, managers might benefit from promoting a creative or innovative image. To be effective an innovation strategy must be exclusive and enhance the value of the product or service in question.

Innovation levels vary from sector to sector, and different sector's strategies can affect performance differently depending on the sector. For the restaurant sector, the size of a restaurant, has an influence on its strategy and overall performance (Kankam-Kwarteng, Osman, and Donkor, 2019). Jogaratnam, Tse, and Olsen (1999) found that innovation is a crucial component for successful entrepreneurship when studying small independent restaurants. Furthermore, Jin, Goh, Huffman, and Yuan (2014)

indicated that the overall perceived image of a restaurant's innovativeness stems from food quality, environmental quality, and price fairness. The analysis also showed that this perceived image of innovativeness affects both brand credibility and brand preference, while brand credibility influences both brand preference and customer loyalty. Accordingly, further research is required to investigate the innovation dimension in the diverse restaurant sector to maintain continuous innovation, which is critical for SME growth and survival (Lee, Sardeshmukh, and Hallak, 2016).

As most of Thai people enjoy the convenience and simplicity of QSRs, it is necessary for QSR entrepreneurs to use a variety of strategies to achieve a competitive advantage in their highly competitive environment. However, precedent studies about QSR located in Bangkok are not yet abundant, specifically regarding innovation strategies. Even though the links between entrepreneurial traits, innovation, and the performance of restaurants in Bangkok has been recently examined (Karnreungsiri, 2020), the study did not factor in the customers' perspective on these innovation attributes. The question of what satisfactory innovation attributes are preferred by QSR customers, is as yet, unanswered. To eradicate this gap the importance-performance analysis tool will be employed, assessing the quality attributes for enhancing competitiveness (Lai and Hitchcock, 2015). The primary objective of this research is to investigate and understand customers' perceptions of QSR innovations, regarding their expectations (perceived importance) and satisfaction (perceived performance). In conclusion to this analysis, a model of QSR innovation strategies is developed to guide strategic innovation advancement, helping QSRs to accomplish a competitive advantage and long-term restaurant business success. This study does not only contribute to the critical generation of new strategic paradigms for QSRs in Bangkok, but also works towards developing literature surrounding innovation in dynamic environments within the hospitality industry of Thailand.

2. LITERATURE REVIEW

2.1 Innovation

According to the original developer of the theory, Schumpeter, innovation is a vigorous process and the main driver of economic development, (Schumpeter, 1952); it is successful due to its process of replacing old technology with newer hardware and fresh ideas (Damanpour, 1996). Innovation generally consists of a new administration, organisation, and marketing procedures (Battisti and Stoneman, 2010). De Brentani (2001) divided the various facets that affect the quality of innovation into four primary clusters or groups: (1) the service or product-related cluster, (2) the market-related cluster, (3) the process-related cluster, and (4) the

organizational group of products. It seems that the term innovation relates not only to products and processes, but also to both marketing and organization (Gunday, Ulusoy, Kilic and Alpkan, 2011). The Oslo Manual supports this, with four different innovation types being introduced: product innovation, process innovation, organizational innovation, and marketing innovation (Organization for Economic Co-operation and Development [OECD] and the Statistical Office of the European Communities [Eurostat], 2005).

Product innovation centres around what the market has to offer, such as new products, services, or programs (Kahn, 2018). This innovation also involves technical specifications, materials, and components, with incorporated software, user-friendliness and other functional features being vital as well. Product innovation can be based on new knowledge and technology, or new combinations and techniques, using those already in existence (OECD and Eurostat, 2005). Process innovation refers to improvements made to a current method or process, such as faster processing, higher throughput, or lowered costs. (Kahn, 2018). Savitz, Kaluzny and Kelly (2000) added that process innovation should significantly increase the value delivered to stakeholders by changing the processes of production and delivery of the products. Thus, organizational innovations are interconnected with all administrative efforts, including renewing organizational systems, procedures, and routines, to encourage cohesiveness, coordination, collaboration, information and knowledge sharing, and learning within a team (Van der Aa and Elfring, 2002). Organizational innovations tend to improve corporate administration, such as by reducing administrative and transaction costs, improving job satisfaction, or reducing supply costs (OECD and Eurostat, 2005). Marketing innovation involves applying new marketing methods, including new types of promotion; it serves to motivate customer demand by creating awareness, brand recognition, and product uniqueness (Kahn, 2018). OECD and Eurostat (2005) also explained that marketing innovations can include modifying the product design and packaging, adjusting product promotion and placement, or changing the prices of goods and services.

Regardless of the restaurant sector, great managers must encourage the use of creativity as part of innovation development. While this creative process encompasses management, training, and supply concerns, it also provides a realistic environment for customer feedback (Harrington and Ottenbacher, 2009). Additionally, Jin et al. (2014) indicated that the perceived innovation of food quality, environmental quality, and price fairness, are significant predictors of a restaurant's overall perceived innovativeness. Their analysis also showed that the perceived image of a

restaurant's innovation influences both brand credibility and brand preference, which both affect customer loyalty. Despite the complex nature of innovation and the difficulty organisations may have in achieving it successfully (Hamidizadeh and Eghtesadi, 2012), it is a vital tool for securing a competitive position and improving the organisation's circumstances. This improvement of strategic position afforded by implementing innovative techniques is essential for businesses that wish to establish long-term advantages over their competitors (Drucker, 1985). In the same way that Okwiet and Grabara (2013) studied innovation's influence on the enterprise activities of SME's, this study targets the imperative variables, and how innovation is perceived by SME restaurant customers in Thailand. These variables are then explored to find their classification as theoretical elements.

2.2. Importance and Performance Analysis

Importance and performance analysis (IPA) is a graphical tool that is applied as an effective means for evaluating a firm's competitive position in the market, identifying areas of improvement, and guiding strategic planning efforts (Martilla and James, 1977). It is a simple but effective tool, using importance and performance to provide a two-dimensional analysis of the most imperative quality attributes. Importance is defined as the perceived significance a customer expects from an attribute of interest (Siniscalchi, Beale, and Fortuna, 2008), while performance is the extent to which that attribute is well-performed in the customers' opinion (Levenburg and Magal, 2005). These two dimensions are then integrated into a matrix (Lai and Hitchcock, 2015) constructed of four quadrants (Martilla and James, 1977), based on the mean scores of attributed importance (Hemmasi et al., 1994).

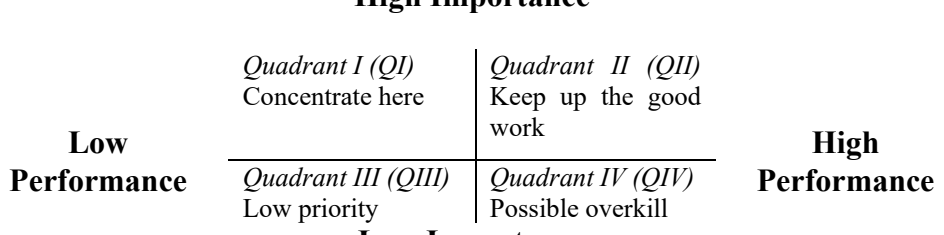
These quadrants are characterized are as follows: *Quadrant I Concentrate Here* represents the area where performance levels are low and are deemed highly important, suggesting that efforts to improve should be concentrated here. *Quadrant II Keep up the Good Work* denotes areas where attributes are highly valued and performance levels are acceptable, meaning they should be maintained at their current standard. *Quadrant III Low Priority* signifies areas where performance levels are low, but these attributes are not seen as important, implying that there is no urgent need to improve in this area and so only limited resources should be expended. *Quadrant IV Possible Overkill* includes areas where performance levels are high, but the attributes are not defined as important for customers; thus, improvement to attributes in this quadrant can be minimized. The interpretation of the IPA is graphically displayed on a grid divided into four quadrants.

Figure 1 illustrates the IPA grid. The Y-axis reports the customers'

perceived importance of selected attributes, and the X-axis shows the performance of products (or services) that involve these attributes.

One of the interesting issues when applying this IPA technique is where to draw the middle point for each quadrant. It has been suggested that the mid-point could be decided by the decision-makers (Martilla and James, 1977), however, it may be more appropriate to use the mean scores for each dimension to decide the location of the mid-point (Hollenhorst, Olson and Fortney, 1992). As average scores vary between these factors, it is more logical to consider importance and performance as different categories in the decision maker's mind. Although some issues surrounding IPA are still to be discussed, academics and practitioners have widely adopted this approach. Some choose to replace performance with satisfaction (Lewis and Chambers, 1989: Chang and Chen, 2011: Chen, 2014), while some, like Martin (1995) explore service providers by the customers' perceptions of quality service expectation instead.

Moreover, some authors have claimed that using IPA can be potentially misleading due to the ignorance of the relationship between a firm's performance and the expectations of its customers (Chen, Chen and Su, 2018). However, the IPA technique is used continuously and pervasively in tourism and hospitality to assist businesses in finding the most appropriate course of action to enhance competitiveness. Therefore in this paper, additional statistical methods are used to support the IPA; these include an exploratory factor analysis (EFA) for discovering the internal reliability of quality attributes (Cohen, Swerdlik, and Smith, 1992: Child, 2006), Cronbach's Alpha test for testing the scale reliability and internal consistency of the attributes (Cronbach, 1951), and finally paired-sample t-tests for testing the variable correlations and confirming the significant differences between the two conditions (Lai and Hitchcock, 2015). To a certain extent, these



Source: Martilla and James (1977)

Figure 1 Importance and Performance Analysis Grid

methods will be employed along with the practical IPA approach within the context of the Thai QSR business for the purpose of this paper.

3. METHODOLOGY

3.1. Population and Sampling Determination

The target population of this study consists of all QSR customers in Thailand, which is a very broad population; a non-probability sampling technique was applied to narrow the sample selection. The limit of maximum variability was assumed to be 50% ($p = 0.5$), as the target population and degree of variability were anonymous. To achieve a 95% confidence level with ±5% precision the required sample size was 384 (Cochran, 1977). This number was rounded up to the nearest hundred to ensure that the sample size was representative of the population. Thus, 400 respondents were chosen for data collection, using a convenience sampling method. Convenience sampling is a suitable method for this study as it meets certain practical criteria such as easy accessibility, geographical proximity, general availability, and the willingness to participate by the target population (Dörnyei, 2007). Using this method, all selected respondents must be situated, either spatially or administratively, near to where the data were being collected (Etikan, Musa and Alkassim, 2016). The National Statistical Office (2017) has previously indicated that people aged 15 and over have purchasing power, and so a purposive sampling technique was employed alongside the convenience sampling in this study to eliminate customers who were not of working age. This paper found that most respondents with purchasing power were 30 years of age or over.

3.2 Questionnaire Design and Data Collection

A self-administered questionnaire was used for all data collection in this quantitative research. The questions were developed using the Oslo Manual, which provides a guide to the implementation of innovation surveys in developing countries (OECD and Eurostat, 2005). Many developing countries conduct innovation surveys by adapting these guidelines to reflect the economic and societal differences within their own countries. Similarly, these guidelines were employed and modified in this paper, to ensure that the questionnaire items were compliant with the different structures in Thailand, when designing the questionnaire.

Moreover, as it is necessary to conduct validity and reliability testing at the item development stage of the self-administered questionnaire (Cohen, Manion and Morrison, 2007), the index of item-objective congruence test (IOC) was adopted to evaluate the content validity (Rovinelli and Hambleton, 1976). This process begins by providing several competing objectives for each question. Three content experts are

then consulted, giving ratings for each question (Zikmund, Babin, Carr and Griffin, 2013) based on how well they achieve the study objectives. The resulting rating from this test was +1, indicating that all experts agreed that the items were focused on the correct objective.

Following this, 10% of the sample were used in a pre-test of the questionnaire to determine any possible difficulty for the respondents and to assure the construct objectives (Presser et al., 2004). Cronbach's alpha was then used to measure the scale reliability and test the internal consistency of the set of questionnaire items (Cronbach, 1951). The test provided an alpha value of 0.89, which is higher than the 0.70 recommended minimum acceptable level of reliability (Peterson, 1994). Lastly, the questionnaire was revised by removing unclear or ambiguous questions.

The final questionnaire was divided into three sections. The first section consisted of demographic variables, focusing on the respondents' characteristics, background, and attributes (Groebner, Shannon, Fry and Smith, 2004). The demographic variables important to this study were gender, age, education, and income. All questions use nominal and ordinal scales. The second section examined the expectations of the customers of QSR regarding their innovation attributes. The statements described details of each predetermined innovation attribute and were given with a measurement level. The customers were asked to assess perceived importance on a five-point Likert scale (Cooper and Schindler, 2006) from 1-5, where 1 = not at all important, 2 = slightly important, 3 = moderately important, 4 = very important, and 5 = extremely important. The third section investigated customer satisfaction towards QSR performance regarding implementation of innovation attributes. Customers were asked to measure the perceived performance of each predetermined innovation attribute. The level of measurement ranged from 1-5 where 1 = never performed, 2 = rarely performed, 3 = sometimes performed, 4 = often performed, and 5 = always performed.

With the questionnaire finalised, the primary data for this study were collected. Data collection was carried out in various working and shopping areas in downtown Bangkok; these included Silom, Sathorn, Asok, Ratchada, Ratchaprasong, Siam, and Pratunam (Fiscal and Investment Information Center, 2019). The questionnaire was delivered to 400 respondents, who answered and returned the completed questionnaires to the research team. The team then checked the questionnaires to ensure that they were filled in completely.

3.3 Data Analysis

The data from the survey were tallied and analysed using the SPSS program. Descriptive statistics were utilized, including frequency, standard deviation, and ranking. The data set was then used to investigate

construct validity (Cohen, Swerdlik, and Smith, 1992) by exploratory factor analysis (EFA), as this assists in simplifying interrelated measures, refining them to form a new limited set of variables (Child, 2006). A Cronbach's Alpha test was then employed again to test the scale reliability and internal consistency of the variables (Cronbach, 1951). Gap analysis followed, focussing on the differences of the concerned areas. This analysis effectively measured and greatly influenced the overall service attributes (Abalo, Varela and Manzano, 2007).

Following this, paired-sample t-tests were employed to test the hypotheses of variable correlation. This test is effective when collecting data on two different conditions from one group of respondents (Pallant, 2016). It assists in confirming significant differences between the two conditions (Lai and Hitchcock, 2015).

At the end of the analysis, IPA was applied; this model offers a way to evaluate managerial actions according to the relationship between the perceived importance and the performance of the variables (Sheppard, Hartwick and Warshaw, P.R. 1988). Finally, a discussion centred around the findings and problems of the research provided a conclusion under the determined objectives.

4. RESULTS

4.1 Demographic Characteristics

The questionnaires were answered by 400 respondents; their demographic characteristics showed that 57.00% of the 400 respondents were male, while 43.00% were female. Regarding their age distribution, 37.75% were between 40 and 49 years of age, 27.00% were between 30 and 39 years, 18.25% were 50 years or above, and 17.00% were below the age of 30. Regarding education level, 56.75% of the respondents held a bachelor's degree, 23.00% held a master's degree, while 20.25% held neither. In terms of monthly income, 35.50% earned between 20,000 and 39,999 baht, 34.50% earned 40,000-59,999 baht, 17.00% earned less than 20,000 baht, and 13.00% earned 60,000 baht or more.

4.2 Descriptive Statistics of the Variables

The respondents were asked to rate their expectations (perceived importance) and satisfaction (perceived performance) regarding twenty-one innovation attributes of QSRs. The mean and standard deviation of perceived importance and performance were analysed, with the means being sorted in ascending order, as illustrated in Table 1.

According to the results for perceived importance, the mean ranged from 4.09 to 4.32, implying that the respondents perceived most innovative attributes as very important to extremely important. The top three characteristics within this category were *introducing new food to the menu* with the highest importance (4.32), *adopting new cooking methods* (4.31), and *changing*

Table 1 Ranking of Perceived Importance and Performance of Innovation Attributes in Quick Service Restaurants.

	Importance			Performance		
Innovation Attributes	Mean[a]	SD[c]	Ranking	Mean[b]	SD[c]	Ranking
Introducing new foods to the menu	4.32	0.74	1	4.15	0.80	6
Adopting new cooking methods	4.31	0.77	2	4.23	0.81	2
Changing food sources	4.30	0.73	3	4.24	0.78	1
Developing new digital marketing channels	4.29	0.75	4	4.22	0.78	3
Developing new food appearances	4.28	0.74	5	4.19	0.77	4
Developing new brand logos or symbols	4.26	0.73	6	4.12	0.78	7
Designing new attractive menus	4.24	0.74	7	4.17	0.79	5
Developing a new restaurant atmosphere	4.22	0.72	8	4.09	0.78	9
Offering new online services	4.21	0.76	9	4.08	0.84	10
Offering more sauces and seasoning options	4.20	0.71	10	4.08	0.78	12
Allowing customers to give online feedback	4.19	0.82	11	4.06	0.87	14
Adopting GPS tracking for food deliveries	4.19	0.82	12	4.05	0.85	17
Acquiring restaurant standard certificates	4.17	0.77	13	4.06	0.80	16
Developing a new uniform or working dress code	4.16	0.75	14	3.98	0.81	21
Motivating customer generated content	4.16	0.72	15	4.08	0.76	11
Acquiring innovative cooking equipment	4.16	0.83	16	4.06	0.87	15
Offering new online membership services	4.15	0.79	17	4.09	0.79	8
Offering new techniques for delivery services	4.13	0.79	18	4.06	0.77	13
Developing new safety or sanitation regulations	4.12	0.76	19	4.04	0.83	18
Developing a new food ordering system	4.11	0.76	20	4.00	0.79	20
Adopting a new computerized system	4.09	0.77	21	4.02	0.82	19

a Mean scale of 1 – not at all important to 5 – extremely important.
b Mean scale 1- never performed to 5 – always performed
c Standard Deviation

Table 2 Results of Exploratory Factor Analysis for Innovation Attributes

Innovation Attributes	Factor loading	EV[b]	PV[c]	Commu.[d]
Factor 1: Marketing Innovation *(n=6, α[a] = 0.94)*		8.30	39.50%	
Mktg1: Developing new digital marketing channels	0.862			0.815
Mktg2: Designing new attractive items for the menu	0.860			0.840
Mktg3: Developing new appearance for food items	0.846			0.776
Mktg4: Developing new brand logos or symbols	0.841			0.771
Mktg5: Motivating customer generated content	0.821			0.784
Mktg6: Developing a new restaurant atmosphere	0.791			0.713
Factor 2: Organizational Innovation *(n=5, α = 0.92)*		2.88	13.73%	
Org1: Developing a new food ordering system	0.897			0.859
Org2: Adopting a new computerized system	0.877			0.817
Org3: Acquiring restaurant standard certificates	0.837			0.779
Org4: Developing a new uniform or working dress code	0.802			0.657
Org5: Developing new safety or sanitation regulations	0.791			0.661
Factor 3: Product Innovation *(n=5, α = 0.82)*		2.03	9.68%	
Prod1: Offering new online services	0.792			0.687
Prod2: Offering new techniques for delivery services	0.773			0.656
Prod3: Introducing new foods to the menu	0.698			0.625
Prod4: Offering more sauces and seasoning options	0.682			0.508
Prod5: Changing food sources	0.632			0.545
Factor 4: Process Innovation *(n=5, α = 0.83)*		1.40	6.67%	
Proc1: Adopting new cooking methods	0.842			0.781
Proc2: Offering new online membership services	0.729			0.606
Proc3: Adopting GPS tracking for food deliveries	0.615			0.570
Proc4: Acquiring innovative cooking equipment	0.579			0.563
Proc5: Allowing customers to give online feedback	0.571			0.599

Note: α = Cronbach's Alpha; EV: Eigenvalue; PV: 69.58% of the cumulative variance explained. Commu.= Communalities; A Kaiser Meyer Olkin (KMO): 0.864; Bartlett's Test of Sphericity value: 6618.158

food sources (4.30).

Regarding perceived performance, the mean ranged from 3.98 to 4.24, indicating that the respondents rated the restaurants' performance as often performed to always performed. The top three ranked characteristics of perceived performance were *changing food source* (4.24), *adopting new cooking methods* (4.23) and *developing new digital marketing channels* (4.22) respectively.

4.3 Validity and Reliability Test

To decide the proper inference extracted from the test scores, construct validity performed by EFA was necessary. The associated results are illustrated in Table 2.

Table 2 shows that the twenty-one predetermined innovation attributes could be divided into smaller sets of factors; these explain most of the variation among the attributes. The following annotations justify that the data sets were appropriate for the factor analysis. The principal components provided four factors with reasonable loadings over the recommended cut-off of 0.4, based on pragmatic reasoning, which has a different significant-loading value (Yong and Pearce, 2013). The four factors are listed in the chart as marketing, organizational, product, and process, innovation. These factors have an eigenvalue greater than one, accounting for about 69.58% of the variance in the innovation attributes after rotation. This confirms that the variance of the data was moderately accounted for by the common factors (Child, 2006). The Kaiser-Meyer-Olkin (KMO) measure showed the sampling adequacy and fit of the data was 0.864, indicating creditable and interrelated data, as the calculated vlue is above the required 0.6 (Kaiser, 1974). The Bartlett's Test of Sphericity value was 6618.158, with a significance value of 0.000, implying a significant and adequate correlation according to the factor analysis (Pallant, 2016). The communalities ranged from 0.508 to 0.859 with an average value of 0.696, complying with the Kaiser Criterion for reliability, which states the value should be equal to or above 0.60 (Field, 2009).

Finally, the Cronbach's Alpha coefficient of the four factors ranged from 0.82 to 0.94. These values were above 0.70, confirming that the attributes in each factor qualified for scale reliability and internal consistency (Cronbach, 1951; Peterson, 1994).

4.4 Gap Analysis

To highlight the respondents' areas of concern, the gap between the perceived expectation of services and the satisfaction attained, was assessed. For this study, this meant the gap between the mean scores for perceived importance and for performance for the four factors, with all individual innovation attributes being calculated. The results are outlined in Table 3 and 4. In examining this gap analysis, it can be

Table 3 Paired Sample Correlations and Testing for the four Factors

	Importance Mean	Performance Mean	Gaps	R	t-test	Sig
Factor 1 Marketing	4.24	4.15	0.09	0.917	6.86	0.00
Factor 2 Organizational	4.13	4.02	0.11	0.896	7.05	0.00
Factor 3 Product	4.22	4.12	0.10	0.876	6.43	0.00
Factor 4 Process	4.21	4.10	0.12	0.865	7.15	0.00

Table 4 Paired Sample Correlations and Testing for Individual Innovation Attributes

	Importance	Performance	Gaps	R	t-test	Sig
Factor 1	Mean	Mean				
Marketing						
Mktg1	4.29	4.22	0.07	0.852	3.24	0.00
Mktg2	4.24	4.17	0.07	0.794	2.94	0.00
Mktg3	4.28	4.19	0.09	0.765	3.28	0.00
Mktg4	4.26	4.12	0.14	0.765	5.17	0.00
Mktg5	4.16	4.08	0.08	0.854	3.85	0.00
Mktg6	4.22	4.09	0.13	0.814	5.31	0.00
Factor 2						
Organizational						
Org1	4.11	4.00	0.11	0.822	4.85	0.00
Org2	4.09	4.02	0.07	0.853	2.88	0.00
Org3	4.17	4.06	0.11	0.820	4.65	0.00
Org4	4.16	3.98	0.18	0.744	6.43	0.00
Org5	4.12	4.04	0.08	0.748	2.83	0.01
Factor 3						
Product						
Prod1	4.15	4.09	0.06	0.795	2.28	0.02
Prod2	4.13	4.06	0.07	0.853	3.20	0.00
Prod3	4.32	4.15	0.16	0.751	5.84	0.00
Prod4	4.20	4.08	0.12	0.736	4.29	0.00
Prod5	4.30	4.24	0.07	0.845	3.20	0.00
Factor 4						
Process						
Proc1	4.31	4.23	0.08	0.839	3.91	0.00
Proc2	4.21	4.08	0.13	0.848	5.92	0.00
Proc3	4.19	4.05	0.14	0.723	4.27	0.00
Proc4	4.16	4.06	0.10	0.764	3.25	0.00
Proc5	4.19	4.06	0.13	0.808	5.20	0.00

seen, that the gaps for all four major factors were small, ranging only between 0.09 and 0.12, while the gaps between individual innovation attributes were sometimes wider, ranging from 0.06 to 0.18.

4.5 Measure the Paired-Samples T-Test

A further analysis was applied via a paired-samples t-test for the individual attributes. This test confirmed that there were significant differences between the level of perceived importance of the innovation attributes and the corresponding perceived performances. The test results are illustrated in Table 3 and Table 4.

Table 3 reveals that the correlations of the four factors ranged between 0.865 and 0.917 and were all positive. This means that there was a significant correspondence between the importance and performance scores for each factor. The factor which showed the highest level of correlation was marketing innovation (0.917), followed by organizational innovation (0.896), product innovation (0.876), and finally process innovation (0.865). The differences between the two mean scores for each factor were statistically significant due to their probability values (Sig=0.00), which were less than 0.05.

Table 4 shows that all individual correlations fell between 0.723 and 0.854 and were positive, reflecting the significant correspondence between the scores of importance and performance for each innovation attribute. The three top-ranked innovation attributes with the highest correlation were Mktg5: Motivating customer-generated content (0.854), Org2: Adopting a new computerized system (0.853), and Prod2: Offering new techniques for delivery services (0.853). Additionally, the probability values (Sig.) for each innovation attribute were all less than 0.05, identifying a significant difference between the two mean scores for each attribute.

4.6 Importance-Performance Analysis (IPA)

The four categories, and their individual innovation attributes, all showed a significant difference between the perceived importance and perceived performance. These factors and attributes were accordingly subjected to importance-performance mapping (I-P mapping) in an IPA analysis.

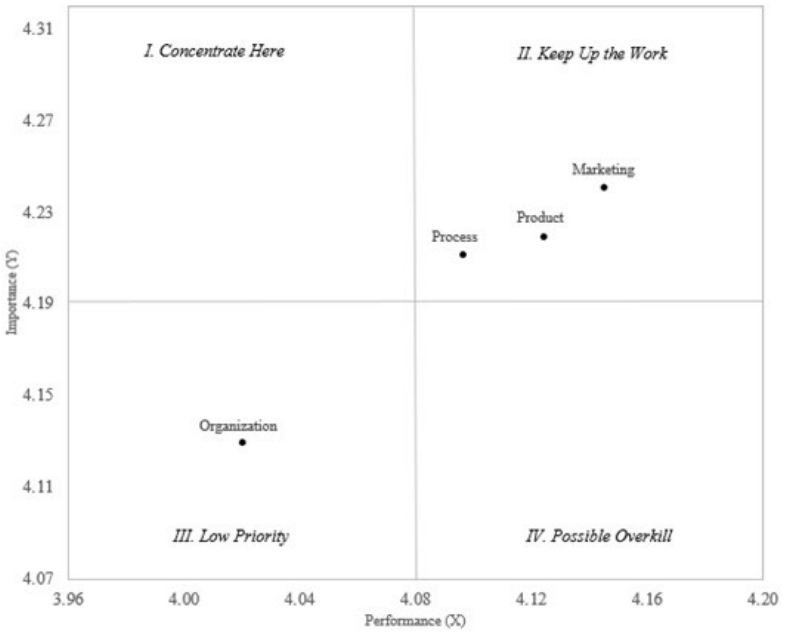
For this study, two mappings were plotted: one for the four factors and another for the individual innovation attributes. The grid crosshair for each mapping was created using the mean average of the importance and performance values; these were 4.19 and 4.08 respectively for the four factors, and 4.21 and 4.11 respectively for the individual innovation attributes. The four quadrants were consequently identified, and named QI: Concentrate here, QII: Keep up the work, QIII: Low priority, and QIV: Possible overkill. The I-P mapping for the four

factors and all individual innovation attributes are shown in Figure 2 and 3.

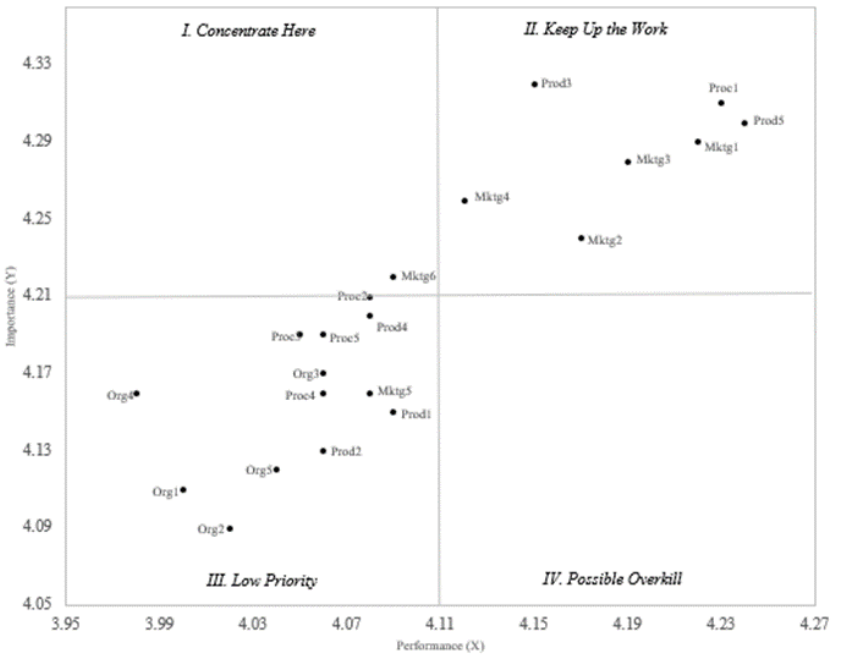
To explain the IPA of Figure 2 the four factors were plotted on the IP grid using their mean values. Three factors were located in Quadrant II "Keep up the Work": marketing, product, and process innovation. This indicates that the respondents value these factors as relevant to the restaurants' performance. In Quadrant III "Low priority" only one factor, organizational innovation, was located, implying that the respondents allocated both low importance and low performance to this factor.

Considering the individual innovation attributes (Figure 3) in Quadrant I "Concentrate Here", only one attribute under the marketing innovation factor was located in this quadrant: Mktg6: Developing a new restaurant atmosphere. At the boundary of Quadrant I and Quadrant III, "Low Priority", is Proc2: Offering new online membership services. As this attribute is an important quality for improving customer relations, it is regarded as belonging to the "Concentrate Here" Quadrant. Thus, these two attributes are regarded as having high importance, but low performance.

Seven innovation attributes fell into Quadrant II "Keep Up the Work. These attributes are associated with marketing, product, and process innovations. Specifically, these



Source: Own Research Based on Hammasi et al., (1994)
Figure 2 Importance-Performance Grid with Factor Rating



Source: own research, based on Hammasi et al., (1994)

Figure 3 Importance-Performance Grid with Innovation Attribute Ratings

attributes are Mktg1: Developing new digital marketing channels; Mktg2: Designing new attractive menus; Mktg3: Developing new appearances for the food; Mktg4: Developing new brand logos or symbols; Prod3: Introducing new food to the menu; Prod5: Changing food sources; and Proc1: Adopting new cooking methods.

In Quadrant III, "Low priority", twelve attributes belonging to all four types of innovation (marketing, product, process, and organizational) are found. The precise attributes are listed as follows: one from marketing innovation - Mktg5: Motivating customer-generated content. Three attributes from product innovation - Prod1: Offering new online services; Prod2: Offering new techniques for delivery services; and Prod4: Offering more sauces and seasoning options. A further three attributes from process innovation - Proc3: Adopting GPS tracking for food deliveries; Proc4: Acquiring innovative cooking equipment; and Proc5: Allowing customers to give online feedback. Lastly, all five attributes of organizational innovation were also in this quadrant - Org1: Developing a new food ordering system; Org2: Adopting a new computerized system; Org3: Acquiring restaurant standard certificates; Org4: Developing a new uniform or working dress code, and Org5: Developing new safety or sanitation regulations.

5. DISCUSSION

The aim of this discussion is to interpret these results while considering the research problems and the attitudes of customers towards QSR innovation, the objective of this study. The 400 QSR customers who were selected for the data collection sample, were asked to assign a score to all twenty-one pre-determined innovation attributes, based on their perceived expectations and satisfaction. They are authorized to judge these services, as customers are considered to be effective reviewers (Davison, 2003). Their given ratings were justified as valid by using EFA and confirmed as reliable by Cronbach's alpha. In accordance with the EF analysis, the innovation attributes were categorized into four factors/groups of innovation: marketing, product, process, and organization. These four innovation types conform to the innovative approach of several researchers: Battisti and Stoneman (2010), De Brentani (2001), Riivari, Lämsä, Kujala and Heiskanen (2012) and Gunday et al. (2011). They make up the key elements of innovation quality that activate economic development (Schumpeter, 1934). The final results show the respondents' rating scores for both perceived expectations and satisfaction. Overall, the respondents judged the factors to have a relatively high degree of expectation, and a lower degree of satisfaction. The differences between the degree of expectation and satisfaction can identify gaps, as affirmed by Wang, Wang, and Zhao (2007). These gaps suggest an effective way to gauge a service effectively (Abalo et al., 2007). Therefore, this study continued the next step of the paired-sample t-test. In testing for both innovation factors and individual innovation attributes, the results show a positive relationship between the perceived expectations and satisfaction, similar to the study by Jin et.al. (2014). These results prove that the differences are sufficiently significant and suitable for further IP analysis (Lai and Hitchcock, 2015). Additionally, the IPA results of this study were scrutinized under the study by Bacon (2003), which supported the idea of using data-centred quadrants to depict IP maps.

In investigating IPA for innovation factors (Figure 2), the 'Keep Up the Work' quadrant is described as having high importance and high performance (Sum, et al. 2019). The greatest number of factors were located in this quadrant, belonging to the marketing, product, and process, factor groups. This is because these factors are comprised of the customer's basic needs (OECD and Eurostat, 2005) and so are seen as the strong points of the QSR business. Restaurant owners should continue to perform all innovation attributes within these factors to achieve continued customer satisfaction. Although several individual innovation attributes had means which deviated widely from their factors' means, leading to them falling into different quadrants from their factors (Figure 3), it is rational to

assign them into this quadrant based on the EF clustering.

Conclusively, the innovation attributes that QSR should consider within this quadrant are firstly marketing innovations - developing new digital marketing channels, possibly through promotion on social media applications such as Facebook and Instagram, to improve a restaurant's prominence. Designing new attractive menus would result in more aesthetic pictures and having clear descriptions with an internationally understood language, which would both improve visibility and ease of access. Developing new food appearances, including the size, colour, cut style, and flavor of the food, and developing new brand logos or symbols will both help to improve the first impressions restaurants can have on the customer. Other examples of marketing innovations include promoting customer-generated content by offering rewards or creating contests. Adopting a new atmosphere for the restaurant would also foster a unique and fantastic environment through stylistic decoration, playing music, mood-coordinated lighting, and comfortable seating.

The second category to take into account, is product innovation. Techniques such as offering new online services for ordering food, menu details, promotions, making payment easier to access, providing new techniques for delivery services, including quicker delivery, appropriate containers, proper handling, and correct delivery menus, times, and charges, make take-aways more attractive. Introducing new foods which properly match innovative food ideas and the customer's lifestyle, and offering a greater variety of sauces and seasoning options, can make significant differences to the customer's consumption habits and practices, while changing food sources provides the benefit of access to better quality raw materials, herbs, and seasoning.

Lastly, is process innovation: adopting new cooking methods, including grilling, steaming, and baking, is vital for seeing improvement in this factor. Offering new online membership services allows customers access to membership registration and special offers and promotions, plus the possibility of earning points and rewards. Adopting GPS tracking for food deliveries supports accurate and quick food delivery. Acquiring innovative cooking equipment, such as frying pans, saucepans, and roasting tins, broadens the restaurant's menu options. Allowing customers the option to provide feedback online through online channels means that restaurants are more in touch with their clientele.

However, when looking in detail at the IP-grid for the innovation attributes rating (Figure 3) there are two attributes that stand out. Developing a new restaurant atmosphere and offering new membership online services fall under the Concentrate Here quadrant. Thus, it is logical that these two attributes

require more focus than the others, as this quadrant is considered very important, but has below average performance levels (Sum, et al. 2019). This is indicative of a deficiency in the restaurants' performance, with these particular attributes failing to fulfil customers' expectations. It is evident that QSRs have not implemented these innovation attributes appropriately, reflected through their under satisfying performance. Therefore, to continue their advancement strong concentration is required by restaurant owners in developing these crucial innovation attributes to continuously improve their service quality.

Regarding the Low Priority quadrant, the innovation attributes situated in this quadrant have low importance and low performance. This quadrant contains all five of the organizational innovation attributes: developing a new food ordering system, adopting a new computerized system, acquiring restaurant standard certificates, developing a new uniform or working dress code, and developing new safety or sanitation regulations. These attributes have been judged as less important by the customers, so despite being implemented poorly by the restaurants they require no further action due to their low priority in the customers' opinion.

6. CONCLUSION

According to several researchers, innovation is the foundational process for developing business. Similarly, QSRs in Bangkok must keep up with the new innovative pace of the food-service industry to enhance their competitive advantage and boost sustainable growth in the transformational situation. The competitive advantages of QSRs are an essential contribution to the related tourism industry, which has been driving Thailand's hospitality industry. Through this research, a self-administered questionnaire survey was employed to capture the customers' expectations and perceptions via a quantitative approach to identify areas in need of significant service improvement. The IPA, which is well recognized as a tool for identifying possible improvement directions, was employed, with the results being elaborated to provide a coherent strategic model for QSRs, allowing them to understand their customers based on the logical evaluation as shown in Figure 4.

This model can be used as a guide for owners of QSR businesses, helping them to keep their standards high, primarily in the three innovation categories of marketing, product, and process innovations. This means that the QSR strategies should consistently include implementing the innovation activities which fall into these three categories. Details are listed in the "Keep up the work" block of the above model. However, QSRs should focus chiefly on the innovation activities that fall within the "Concentrate here" block. They should concentrate especially on developing restaurants that have a

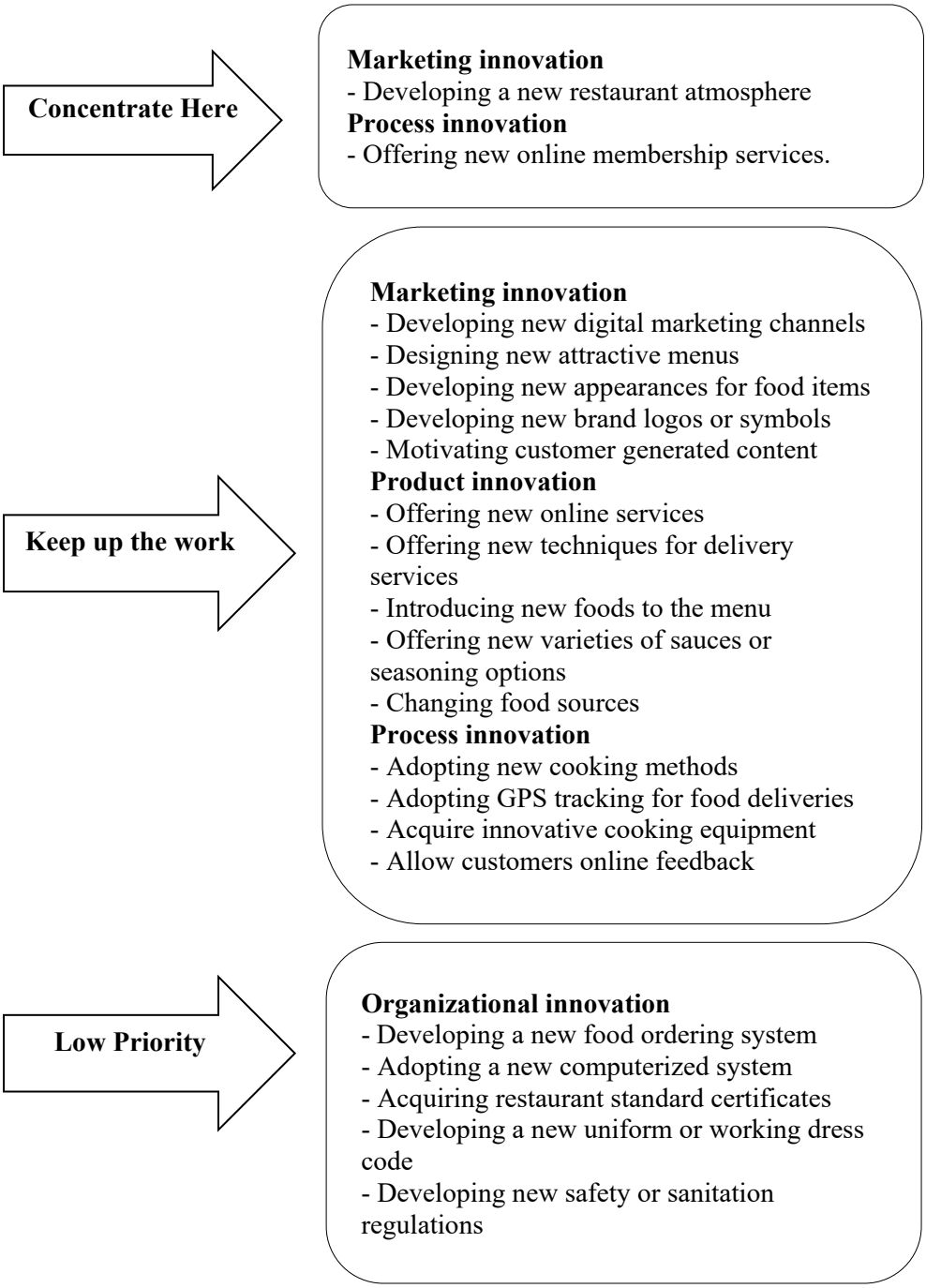


Figure 4: A model of QSR innovation strategies based on IPA

desirable atmosphere. All external factors such as music, lighting, and comfortable seating, along with glamorous decorations provide the ultimate experience for the customer to enjoy their visit to the restaurant. In

addition, developing a membership system would be valued by customers who appreciate online services via their chosen application. An application can customize a customer's experience when they have registered a membership and can facilitate easy communication via messages with the restaurant. Furthermore, restaurants will be able to encourage customer value and engagement by offering special promotions and a point-redemption scheme. This provides an enjoyable experience and supports member retention. It is not necessary for restaurants to change their strategies or resource allocations for the innovation activities that are included in the "low priority" block, as these activities have minimal impact on customers' attitudes and therefore the restaurants' success.

To conclude, the IPA is the strategic tool best suited for QSR entrepreneurs or researchers to evaluate the quality of the services provided by contributing an imperative model explicitly to improve operational performance in the particular area of customer demand. For more effective marketing strategies, which target groups with different lifestyles and behavior patterns, these target groups should be considered when conducting further research. This would enable QSRs to allocate their resources more precisely to those customers with high potential for sales growth and to focus on those with the most loyalty to the brand.

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